PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Kazuhiro OKADA

For: ANGULAR VELOCITY SENSOR

Attorney Docket No.: U 013510-6

Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Please amend the above application as follows.

IN THE CLAIMS

Please cancel claims 1-43.

Please add the following claims.

CERTIFICATION UNDER 37 C.F.R. 1.10*
*(Express Mail label number is **mandatory**.)*
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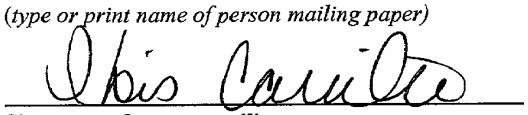

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44. (new) An angular velocity sensor for detecting an angular velocity component comprising:

an oscillator having mass;

a sensor casing for accommodating the oscillator therewithin;

a flexible member for connecting the oscillator to the sensor casing so that the oscillator can be moved with respect to the sensor casing; and

capacitance elements including a first electrode provided on a surface of the oscillator and a second electrode provided on a surface of a fixed member fixed to the sensor casing.

45. (new) An angular velocity sensor for detecting an angular velocity component about a Z-axis in an XYZ three-dimensional coordinate system, the sensor comprising:

an oscillator having mass;

a sensor casing for accommodating the oscillator therewithin;

a flexible member for connecting the oscillator to the sensor casing so that the oscillator can be moved with respect to the sensor casing with at least a degree of freedom along an XY-plane in the coordinate system;

excitation capacitance elements for oscillating the

oscillator in the X-axis direction based on Coulomb force, said excitation capacitance elements including an electrode provided on a surface of the oscillator and an electrode provided on a surface of a fixed member fixed to the sensor casing; and detection capacitance elements for detecting a displacement of the oscillator in a Y-axis direction, said detection capacitance elements including an electrode provided on a surface of the oscillator and an electrode provided on a surface of the fixed member so that an angular velocity component about the Z-axis can be obtained based on the detected displacement.

46. (new) An angular velocity sensor for detecting an angular velocity component about a Z-axis in an XYZ three-dimensional coordinate system, the sensor comprising: an oscillator having mass; a sensor casing for accommodating the oscillator therewithin;

a flexible member for connecting the oscillator to the sensor casing so that the oscillator can be moved with respect to the sensor casing with at least a degree of freedom along an XY-plane in the coordinate system;

excitation capacitance elements and detection capacitance elements, each including a first electrode provided on a

surface of the oscillator and a second electrode provided on a surface of a fixed member fixed to the sensor casing;

a voltage supplying circuit to apply an a. c. signal to the excitation capacitance elements so that the oscillator is oscillated in the X-axis direction based on Coulomb force; and

a capacitance detecting circuit to detect a capacitance value of the detection capacitance elements so that a displacement of the oscillator in a Y-axis direction is detected and an angular velocity component about the Z-axis can be obtained based on the detected displacement.

47. (new) An angular velocity sensor according to claim 3, wherein the oscillator and the flexible member are made of silicon.

48. (new) An angular velocity sensor according to claim 4, wherein the oscillator is made of a silicon substrate.

Respectfully submitted,

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